PATENT

20/Appeal Brief Theresa 1-14-04

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of:	**Mathew McPherson**
Application No.:	**09/852253**
Filed:	**May 9, 2001**
For:	**Arrangment of a Sound Hole & Construction of a Sound Hole Board in an Acoustic Guitar**
Examiner:	**Shih Yung Hsieh**
Group Art Unit:	**2837**

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Commissioner for Patents
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Docket No.: M55.2R-9120-US02

SECOND BRIEF ON APPEAL

This is a Second Brief on Appeal in response to a Notification of Non-Compliance issued October 24, 2003.

This is a Brief on Appeal for the above-identified application in which claims 1-2, 4-23 and 25-27 were finally rejected in an Office Action mailed February 4, 2003. A Notice of Appeal was filed May 22, 2003. The fees required under §1.17(f) and any required petition for extension of time for filing this brief therefore are dealt with in the accompanying Transmittal of Appeal Brief. This brief is transmitted in triplicate in accordance with 37 C.F.R. §1.192(a).

(1) Real Party in Interest

The below identified inventor is the owner of the application:

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(2) Related Appeals and Interferences

No related appeals or interferences are pending.

(3) Status of Claims

Claims 1-2, 4-23 and 25-27 are pending in the application. Claims 3 and 24 were previously canceled. In the final official action of January 22, 2003, claims 1-2, 4-23 and 25-27 were finally rejected and are the subjects of this appeal. The claims are set forth in APPENDIX A of this Brief.

(4) Status of Amendments

On May 22, 2003, a Notice of Appeal was filed in response to the final official action of January 22, 2003. No amendments were made after the final official action.

(5) Summary of the Invention

The invention, as claimed in claim 1, is an acoustic guitar. The guitar has a sound box, which has a sound board. The sound board has a first layer and a second layer, both layers being bonded together, wherein the first and second layers are made of different types of wood and wherein the sound board comprises no more that two layers of wood bonded together. (See Specification page 2, lines 18-21, and page 5, lines 7-20.)

The invention, as seen in claims 2, 7 and 8, also contemplates types of wood for the sound board and specific combinations. Such wood include spruces, cedars,

furs, pines, redwoods, maple, koa, mahogany, birch and popple. (See Specification page 6, line 12, to page 7, line 3. See also, claims 2, 7 and 8, as filed.)

A further aspect of an embodiment of the invention is the added feature of the positioning of the sound hole in the sound board. As claimed in claims 4, 9-11, 13-15 and 17-19, the sound hole is substantially located between the bridge and the upper bout and between the bass strings and the upper edge of the guitar body sound board. (See Figures 1, 2 and 6-7C and claims 4, 9-11, 13-15 and 17-19, as filed).

As claimed in claims 5, 6, 12 and 16 the sound hole may take various configurations, such as one hole, or a plurality of holes in one zone, in a particular shape. (See Figures 6-7C and claims 5 and 6, 12 and 16, as filed.)

As claimed in claims 21-27, the arrangement of the grains of the two layers of boards and their bonding together is also described. In one embodiment, the two layers are glued together and may be further laminated. (See Claims 21, 23 and 25 as filed.)

In a further embodiment of the invention, as claimed in claims 22 and 26-27 the grain directions of the two layers of wood are in substantially perpendicular directions in parallel fashion. (See figure 4, claims 22 and 26-27, as filed, and Specification page 5, lines 21-26.)

(6) Issues

I. Whether the Examiner erred in rejecting claims 1-2, 7-8, 20-21, 23 and 25 under 35 USC §103(a) as being unpatentable over Petek (US 2674912) in view of Sloane (Steel-String Guitar Construction, E. P. Dutton & Co. Inc. New York, 1975, pp. 19).

II. Whether the Examiner erred in rejecting claims 22 and 26-27 under 35 USC §103(a) as being unpatentable over Petek (US 2674912) in view of Sloane (Steel-String Guitar Construction, E. P. Dutton & Co. Inc. New York, 1975, pp. 19) as applied to claims 1, 20, 21 and 25 and further in view of Oehrlein (US 168665).

III. Whether the Examiner erred in rejecting claims 1, 4-6, 9-23 and 25-27 under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 17-20 and 25-37 of co-pending Application No. 09/567,145.

IV. Whether the Examiner erred in rejecting claims 4-6 and 9-19 under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-17 of US 6060650.

(7) Grouping of Claims

For purposes of issue I:

Group A: Claims 1, 20, 21, 23 and 25 stand or fall together.

Group B: Claim 2 stands or falls alone.

Group C: Claim 7 stands or falls alone.

Group D: Claim 8 stands or falls alone.

For purposes of issue II:

Group A: Claims 22 and 26 stand or fall together.

Group B: Claim 27 stands or falls alone.

For purposes of issue III:

Claims 1, 4-6, 9-23 and 25-27 stand or fall together.

For purposes of issue IV:

Claims 4-6 and 9-19 stand or fall together.

(8) Argument

I. The Examiner erred in rejecting claims 1-2, 7-8, 20-21, 23 and 25 under 35 USC §103(a) as being unpatentable over Petek (US 2674912) in view of Sloane (Steel-String Guitar Construction, E. P. Dutton & Co. Inc. New York, 1975, pp. 19).

Group A: Claims 1, 20, 21, 23 and 25

Claim 1 is a representative claim of this group. Claim 1 requires that the sound board comprises no more than two layers of wood. It also requires that the two layers be made of different types of wood. The Examiner asserts that Petek discloses a

guitar using two types of wood, but it fails to disclose only two layers. Sloane is asserted to provide a disclosure of a two layer, plywood sound board. However, even if these references provided the required elements, there is no motivation to make the combination. In fact, Petek teaches away from using two layers.

The combination fails because Petek depends on having 3 layers. It would not have been obvious to make the combination because altering the invention of Petek by making the sound board therein two layers would frustrate the teachings in Petek. Petek is directed at providing "a sounding board or diaphragm with a large ratio of stiffness to weight" (col. 1, lines 4-5). This requires three layers. It is stated in the patent that "a composite sounding board having outer layers made of material with relatively high stiffness...and having an inner layer made of a relatively light-weight material" (col. 1, lines 48-42). The invention depends on layers having differing stiffness, but requires that *the outer layers be the same.* Therefore, three layers are required. It is stated in the patent that the outer layers "need not be of equal thickness or be made of the same kind of material if they have the same or similar characteristics." (See col. 2, lines 13-16.) In order to create the effect the invention attempts to create it must have another layer having a lower stiffness. Since the outer layers have to have the same characteristics, three layers are required. As such, the cited references can not be combined because it would not be obvious to do so. In fact, Petek teaches against it. Therefore, reversal of the rejection is respectfully requested.

Group B: Claim 2

Because claim 2 is dependent from claim 1, all of the arguments made above in connection with claim 1 apply to claim 2. In addition, claim 2 is distinguished in that it requires that the types of wood be chosen from a certain group. Examiner asserts that various types of wood are disclosed in Sloane, however the cited reference still does not provide motivation or disclosure that the only two layers of wood be of different types. Therefore, reversal of the rejection is respectfully requested.

Group C: Claim 7

Because claim 7 is dependent from claims 1 and 2, all of the arguments made above in connection with claims 1 and 2 apply to claim 7. In addition, claim 7 is distinguished in that it requires that the types of wood be cedar for the first layer and spruce for the second. Once again, the Examiner asserts that various types of wood are disclosed in Sloane. However, not only does the cited reference fail to provide motivation or disclosure that the only two layers of wood be of different types, the rejection fails to provide motivation for one two choose this specific combination. Therefore, reversal of the rejection is respectfully requested.

Group D: Claim 8

Because claim 8 is dependent from claims 1 and 2, all of the arguments made above in connection with claims 1 and 2 apply to claim 8. In addition, claim 7 is distinguished in that it requires that the types of wood be redwood for the first layer and spruce for the second. Once again, the Examiner asserts that various types of wood are disclosed in Sloane. However, not only does the cited reference fail to provide motivation or disclosure that the only two layers of wood be of different types, the rejection fails to provide motivation for one two choose this specific combination. Therefore, reversal of the rejection is respectfully requested.

II. The Examiner erred in rejecting claims 22 and 26-27 under 35 USC §103(a) as being unpatentable over Petek (US 2674912) in view of Sloane (Steel-String Guitar Construction, E. P. Dutton & Co. Inc. New York, 1975, pp. 19) as applied to claims 1, 20, 21 and 25 and further in view of Oehrlein (US 168665).

Group A: Claims 22 and 26

Claim 22 is a representative claim of this group. The rejection is based on the rejections of Issue I, as to claim 1, on which claims 22 and 26 are dependent, and further in view of Oehrlein.

Because claim 22 is dependent from claim 1, all of the arguments made above in connection with claim 1 apply to claim 22. In addition, claim 22 is

distinguished in that it requires that the grain directions of the two layers of wood of the soundboard are in substantially perpendicular directions.

Oehrlein discloses a guitar with a sound box having 3 wood layers bonded together for the *bottom board* (Figs. 2 and 3), wherein the grain direction of two of the layers of wood are in differing directions. Oehrlein is directed to the construction of the bottom board of a guitar and not the sound board. The bottom and the sound board are constructed with different motivations. They are two *separate* elements of the sound box having differing functions. The rejection cites one reference which teaches a particular bottom board design, Oehrlein, and two separate references, Petek and Sloane, which are used for their discussion of sound boards. The rejection fails to point to a teaching or motivation which asserts that the teaching of the construction of a bottom board from Oehrlein should be utilized in the creation of a sound board.

The sound board or top of a guitar is not interchangeable with the back of the guitar. They serve distinctly different purposes and the two are constructed differently in many ways. The sound board is meant to vibrate for the fullness of the sound. The bottom/back board is meant to reflect the sound waves back through the sound hole. The cited references even distinguish the two. Oehrlein only focuses its attention on the bottom and the neck and refrains from not only discussing the top or sound board, but doesn't even supply a figure of an entire guitar.

The back and sides of the guitar form an acoustic cavity in much the same manner as a speaker cabinet forms a resonant enclosure for a speaker. The back plate of the guitar is much like the back wall of the speaker cabinet or the top of a piano in that it serves more to reflect sound waves than it does to generate them and it is under very little stress structurally.

The top of the guitar is in essence the sound board of the instrument and as such it must be reinforced (braced) much differently than the back of the guitar. The top of the guitar experiences a number of loads not experienced by the back of the guitar. The top responds directly to the loads imposed on it by the attachment of the neck, fret board, and bridge which are attached to its outer surface. The loading and vibrations of

the guitar's strings are fed into the top sound board directly through the bridge and drive the top of the guitar. The top also has one or more open areas (sound holes) which allow the acoustic guitar to project. All of the above results in vastly different requirements for the construction and bracing of the guitars top as opposed to the guitars back.

In the final official action, it is asserted by the Examiner that it would be obvious to make the asserted modifications for the purpose of improving the performance of the guitar. Even if this were true, according to this combination, one would have a guitar with a back or bottom made according to Oehrlein and a top or sound board made according to Petek/Sloane. Not, as required by the claim, a top or sound board having no more than two layer, wherein the grains are parallel and run perpendicular to one another.

Oehrlein specifically states that he is not addressing the sound board. For this analysis, it is important to point out that Oehrlein specifically is disclosing a bottom or back of a guitar. The claimed invention specifically claims the top or sound board of a guitar. Some motivation must be articulated to apply the Oehrlein back board teachings to sound boards. In light of Oehrlein's specificity in directing his disclosure directly to bottom or backs of guitars, it can not reasonably be even asserted that there is a suggestion for one to apply his teachings to sound boards.

Oehrlein specifically states that his invention is to "improve the construction of the bottom of a string instrument...and also to improve the construction of the neck and head or scroll pieces thereof" (see col. 1, lines 14-20). If this weren't enough to teach one away from using the teachings for a sound board, Oehrlein further states in col. 3, lines 5-9, that

> "[He] does not here claim to have invented any improvement on sounding boards of string instruments, as [his] invention refers only to the bottoms of such instruments, and to their neck and head parts."

As such, absent Applicant's disclosure, one skill in the art would not find it obvious to make the combination asserted in the final official action.

Further evidence that the asserted combination would not have been obvious and that motivation to use Oehrlein's teachings in the construction of a sound board is lacking lies in the reasoning behind the invention of Oehrlein. The purpose was to provide for a strong bottom board which does not utilize ribs (see col. 1, paragraph 6) and still reflects the sound back through the sound hole. To increase strength, three layers were utilized. In fact, Oehrlein states that the bottom is made of *at least* three thicknesses (see the bottom of col. 1 and the beginning of the first full paragraph of col. 2). Oehrlein even suggests incorporating wire in the construction to increase strength. In this, if we were to take Oehrlein's teachings as a whole in our making of a sound board, the motivation would be not to reduce the layers to two, as required by the claimed invention, but to increase the layers and reinforce them with wire. Oehrlein's teachings are in conflict with the motivation used in making a sound board designed to optimize sound and further evidences the differences between bottom boards and sound boards. Only in hindsight of Applicant's disclosure would one take a piece of Oehrlein's teachings in piece meal fashion and apply it to a separate and distinct element of a guitar. Therefore, for the above identified reasons, Applicant respectfully requests that the rejection be reversed.

Group B: Claim 27

The rejection is based on the rejections of Issue I, as to claim 1, on which claim 27 is dependent, and further in view of Oehrlein.

Because claim 22 is dependent from claim 1, all of the arguments made above in connection with claim 1 apply to claim 22. In addition, claim 22 is distinguished in that it requires that the grain directions of the two layers of wood of the soundboard are in substantially parallel planes and run in substantially perpendicular directions. For the arguments further given in Group A of issue II, claim 27 is similarly not obvious in light of the cited references. Reversal of the rejection is therefore requested.

Issue III

Claims 1, 4-6, 9-23 and 25-27 were rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 17-20 and 25-37 of co-pending Application No. 09/567,145.

Although Applicant disagrees with the rejection, to further prosecution and place the case in a better condition for appeal, a terminal disclaimer is being filed concurrently herewith to remove the rejection.

Issue IV

Claims 4-6 and 9-19 were rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-17 of US 6060650.

Although Applicant disagrees with the rejection, to further prosecution and place the case in a better condition for appeal, a terminal disclaimer is being filed concurrently herewith to remove the rejection.

CONCLUSION

Based on the foregoing, applicant believes that the claims are allowable over the cited references. Therefore, the Board is respectfully requested to reverse the rejections of the claims.

Respectfully submitted,

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APPENDIX A

(9) Appendix - Claims on Appeal

1. (Previously presented) An acoustic guitar, the guitar having a body having a soundboard, the soundboard comprising a first layer and a second layer, both layers being bonded together, wherein the first and second layers are made of different types of wood, wherein the sound board comprises no more that two layers of wood bonded together.

2. (Previously presented) The guitar of claim 1, the type of woods used to make the first and second layers being chosen from the group consisting of spruces, cedars, furs, pines, redwoods, maple, koa, mahogany, birch and popple.

3. (Canceled)

4. (Original) The guitar of claim 1, the body including a back side, the soundboard having an upper and lower bout, the upper and lower bout defining a mutual upper edge, a plurality of strings including bass and treble, positioned above the sound board, and a bridge on the sound board in the lower bout for receiving the strings, the guitar further comprising an arrangement of no more than one sound hole zone in the sound board being substantially located between the bridge and the upper bout and between the bass strings and the upper edge of the guitar body sound board.

5. (Original) The guitar of claim 4, wherein the sound hole zone has one hole.

6. (Original) The guitar of claim 4, wherein the sound hole zone has a plurality of holes.

7. (Previously presented) The guitar of claim 2, wherein the first layer comprises cedar and the second layer comprises spruce.

8. (Original) The guitar of Claim 2, wherein the first layer comprises redwood and the second layer comprises spruce.

9. (Original) The guitar of Claim 8, the guitar having a waist between the upper and lower bout, wherein the hole is located between the waist and bridge.

10. (Original) The guitar of Claim 8 wherein the hole is located immediately adjacent to the upper edge of the soundboard at the waist.

11. (Original) The guitar of Claim 8 wherein the hole is oriented in the sound board in general alignment with the adjacent sound board upper edge.

12. (Original) The guitar of Claim 5 wherein the hole is kidney shaped.

13. (Original) The guitar of Claim 12, the guitar having a waist between the upper and lower bout, wherein the hole is located between the waist and bridge.

14. (Original) The guitar of Claim 12, the guitar having a waist between the upper and lower bout, wherein the hole is located immediately adjacent to the upper edge of the soundboard at the waist.

15. (Original) The guitar of Claim 12 wherein the hole is oriented in the sound board in general alignment with the adjacent sound board upper edge.

16. (Original) The guitar of Claim 5, wherein the hole is oval shaped.

17. (Original) The guitar of Claim 16, the guitar having a waist between the upper and lower bout, wherein the hole is located between the waist and bridge.

18. (Original) The guitar of Claim 16, the guitar having a waist between the upper and lower bout, wherein the hole is located immediately adjacent to the upper edge of the soundboard at the waist.

19. (Original) The guitar of Claim 16 wherein the hole is oriented in the sound board in general alignment with the adjacent sound board upper edge.

20. (Previously presented) The guitar of claim 1, the guitar having a sound box, a neck, a plurality of strings positioned above the sound board.

21. (Original) The acoustic guitar of claim 20, wherein the two layers are glued together.

22. (Original) The acoustic guitar of claim 21, wherein the grain direction of the two layers of wood are in substantially perpendicular directions.

23. (Original) The acoustic guitar of claim 21, wherein the sound board is laminated.

24. (Canceled)

25. (Previously presented) The acoustic guitar of claim 1, wherein the two layers of wood are glued together.

26. (Original) The acoustic guitar of claim 25, wherein the grain direction of the two layers of wood are in perpendicular directions.

27. (Previously presented) The guitar of claim 1, wherein the grain direction of the two layers of wood are in substantially parallel planes, running in substantially perpendicular directions.